Remarks

Applicants would like to thank the Examiner for carefully reviewing the subject application. Applicants have corrected a typographical error in claim 1. However, before reviewing the claims in detail, Applicants believe it may be helpful to review some background.

The present application relates to reducing noise that may be bothersome to vehicle passengers in the passenger compartment. Specifically, the application relates to climate control systems in a vehicle, where ducts direct flow of air to a passenger compartment of the vehicle. One example approach uses radial vanes in a duct that are located downstream of a fan, but upstream of a discontinuity, such as a bend. In this way, it is possible to reduce the turbulence of the flow around the bends or discontinuities, thereby reducing the noise.

A. Claim 1

Claim 1 states:

> 1. A climate control system in a vehicle, the system comprising:
>
> a duct having a bend, said duct directing a flow or air to a passenger compartment of the vehicle;
>
> a blower fan coupled to said duct upstream of said bend; and
>
> a set of radial vanes in said duct, said vanes protruding inwardly into said flow of air in said duct, said flow caused by operation of said blower fan, said vanes located downstream of said fan and upstream of said bend, said vanes reducing noise otherwise caused by air flowing around said bend.

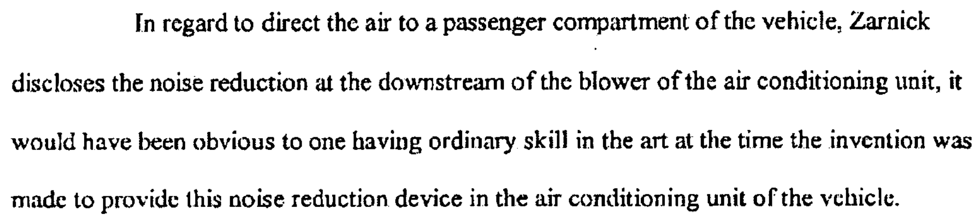
The Rejection has applied two different combinations of references against claim 1. However, as explained in more detail below, none of the applied references show a climate control system in a vehicle, nor do any of the applied references show any ducts with a bend that direct a flow of air to a passenger compartment of the vehicle. Rather, the Rejection uses references from disparate fields, and relies on a theory in which the combination of references leads to an inoperable system.

A.1 The Rejection fails to even cite any disclosure of, or motivation for, applying the building noise reduction techniques in a passenger compartment of a vehicle

The Rejection applies two combinations of references under 35 U.S.C. §103. First the Rejection applies Zarnick (U.S. 5,728,980) in view of Kawanishi et al. (U.S. 6,078,671). Second, the Rejection applies Zarnick in view of Choi (U.S. 5,722,357). However, even assuming all three of these references are combined, the combination still fails to show all claimed elements.

As noted above, claim 1 requires a duct directing a flow of air to a passenger compartment of a vehicle. None of the cited references show a passenger compartment of a vehicle, let alone a duct directing a flow or air to a passenger compartment of a vehicle.

Rather, the Rejection contains and unsupported assertion that this missing element would be "obvious." It states at pg. 2 (and also at pg. 3):



> In regard to direct the air to a passenger compartment of the vehicle, Zarnick discloses the noise reduction at the downstream of the blower of the air conditioning unit, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide this noise reduction device in the air conditioning unit of the vehicle.

Applicants respectfully submit that none of the cited references contain any support for such an assertion. For example, Zarnik relates to a plastic covered duct silencer adapted for an enclosed building, with no mention whatsoever of vehicles, or passenger compartments of vehicles. Further, Kawanishi et al. uses a system that relies on placing a microphone and a loud speaker in the duct, also with no mention of vehicles or passenger compartments of vehicle. And finally, Choi deals with engine noise created by an engine throttle in the intake system, not noise from ducts directing air to the passenger compartment. Applicants can find nothing in any of these references relating to ducts directing air to a passenger compartment of a vehicle. As such, the combinations are improper.

There are still further reasons that the Rejection should be withdrawn. Specifically, regarding the first combination of Zarnik and Kawanishi et al., the Rejection asserts that it would be obvious to use the radial vanes of Kawanishi et al. in the apparatus of Zarnik to reduce sound in the duct. Applicants object to the combination since there is no motivation to make such a combination in the record. For example, according to the disclosure of Zarnik, noise has already been reduced; and Applicants can find no reason one skilled in the art would attempt to modify the vanes at all. Further, Applicants can find no reason why the particular vanes of Kawanishi et al. would be selected. This also applies to the second combination of Zarnik and Choi. As such, this is yet another reason why the proposed combinations are improper.

A.2 The Rejection relies on a combination that leads to an incompatible system

A brief review of the combinations urged in the Rejection is first described using the drawings of the references. As shown by Figure 1 of Zarnik (relied on by the Rejection at pg. 2), it relates to a square duct for buildings. However, as shown by Figure 10 of Kawanishi et al. (also relied on by the Rejection at pg. 2), it relates to a round duct.

FIG.I

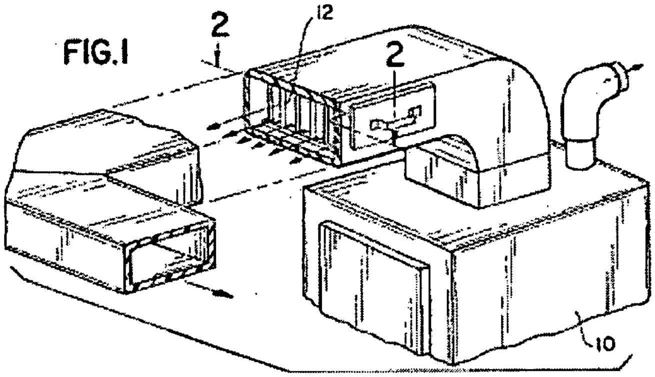


Figure 1 of Zarnik

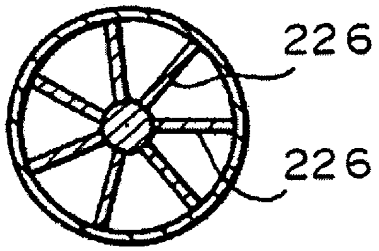


Figure 10 of Kawanishi et al.

The second combination again relies on Figure 1 of Zarnik, but substitutes Choi for Kawanishi et al. As shown by Figure 6 of Choi, for example, Choi also relates to round ducts.

FIG.I

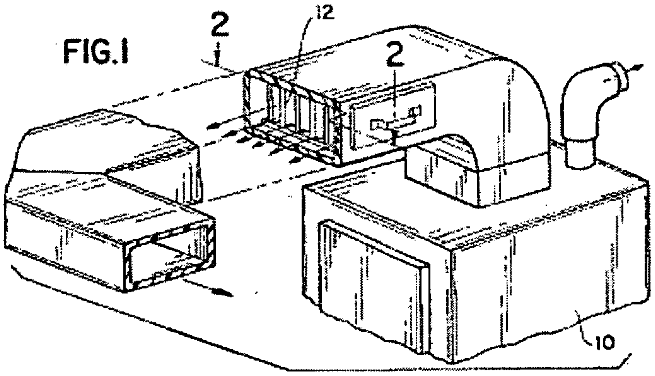


Figure 1 of Zarnik

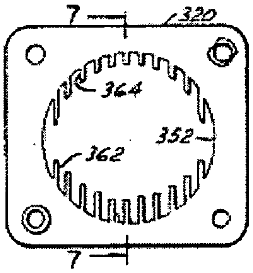


FIG.6

Figure 6 of Choi.

In reviewing the two combinations, an old saying seems to be relevant -- the saying that is used to identify a "misfit" where two things are just not meant to go together. Specifically, Applicants respectfully submit that trying to use radial vanes in a square duct would be like trying to put "a round peg in a square hole." Surely the person of ordinary skill in the art would not be motivated to follow such an approach leading to what would appear to be a fundamentally incompatible system.

B. Conclusion

Since the above arguments apply to all of the pending rejections, Applicants respectfully submit that the pending claims should be allowed.

Based on the foregoing comments, the above-identified application is believed to be in condition for allowance, and such allowance is courteously solicited. If any further amendment is necessary to advance prosecution and place this case in allowable condition, the Examiner is courteously requested to contact the undersigned by fax or telephone at the number listed below.

Please charge any cost incurred in the filing of this Amendment, along with any other costs, to Deposit Account No. 06-1510. If there are insufficient funds in this account, please charge the fees to Deposit Account No. 06-1505. A duplicate copy of this sheet is enclosed.

CERTIFICATE OF MAILING

I hereby certify that the attached documents are being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on November 29, 2004.

Lauren Barberena

Respectfully submitted,

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